

EQUALLOWS

Minecraft Collection



Amen to Walking Blocks

Amen to Walking Blocks CHCS: Computing

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Objective

In this project we will combine the powers of Sonic Pi & Minecraft to create a disco music block in Minecraft using sounds from Sonic Pi.

Getting Started

1. Start by going into the Raspberry Pi menu and clicking on games, then Minecraft Pi. Select Start Game then Create New. Press ESC on your keyboard and minimise the window.
2. Start by going into the Raspberry Pi menu and clicking on Programming, then Sonic Pi. This takes a few minutes to load, it is best not to click anywhere while this is loading as it can crash the program.
3. Double click on the EduBlocks desktop icon to open up the program. You are now ready to start coding.

Let's Code

Now lets build our code. These blocks will import the libraries needed for this program. Purple blocks can be found in Minecraft >> Commands. Pink blocks can be found in basic & blue in Sonic Pi.

```
from mcpi.minecraft import Minecraft
from mcpi import block
import random
import time
from psonic import *
```

In this section of code we are importing the Minecraft Module, Minecraft Blocks Module, Random Module, Time Module & Sonic Pi Module.

Let's Code

The first purple block can be found in Minecraft >> General. Then the pink ones can be found in Basic. Drag them over to the workspace and connect to the previous blocks . When entering text into blocks , click inside - you can tab across.

```
mc = Minecraft.create()  
BlockID = 35  
while True :
```

In this section of code we are connecting to the Minecraft server in order to run the code. The second block will create a variable called BlockID and set it to 35. The last block will create a forever loop which the rest of the code will go into.

As usual the pink blocks can be found in basic, green ones in Minecraft >> Commands and blue ones in Sonic Pi.

```
x, y, z = mc.player.getPos()  
if one_in(2) :  
    RandomWool = random.randint(1,15)  
    mc.setBlock( x , y-1 , z , RandomWool , BlockID )  
    sample( LOOP_AMEN )  
    time.sleep( 1.8 )
```

The if block will run every two beats. This is calculated by Sonic Pi. Later we will add an else block which will run on all the other beats.

Let's Code

Again the pink blocks can be found in basic and the blue one in Sonic Pi. When entering text click on the pale boxes and simply type into them.

This is the else block which will run on all the other beats except the second one.

```
else:  
  sample( DRUM_CYMBAL_CLOSED )  
  time.sleep( 0.7 )
```

Save your code

```
from mcpi.minecraft import Minecraft  
from mcpi import block  
import random  
import time  
from psonic import *  
mc = Minecraft.create()  
BlockID = 35  
while True :  
  x, y, z = mc.player.getPos()  
  if one_in(2) :  
    RandomWool = random.randint(1,15)  
    mc.setBlock( x , y-1 , z , RandomWool , BlockID )  
    sample( LOOP_AMEN )  
    time.sleep( 1.8 )  
  else:  
    sample( DRUM_CYMBAL_CLOSED )  
    time.sleep( 0.7 )
```

Now put all your code together to form a program like the one on the left hand side. Before we run our code, lets save it. Click on the save button in the top right hand corner of the EduBlocks window.

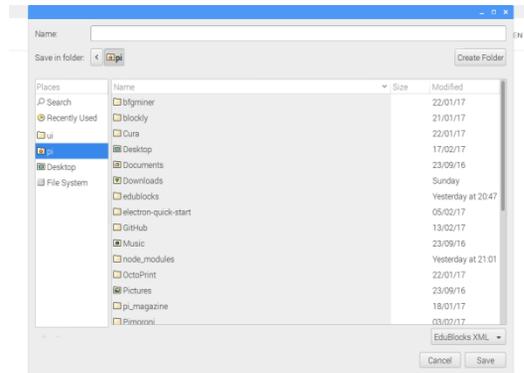
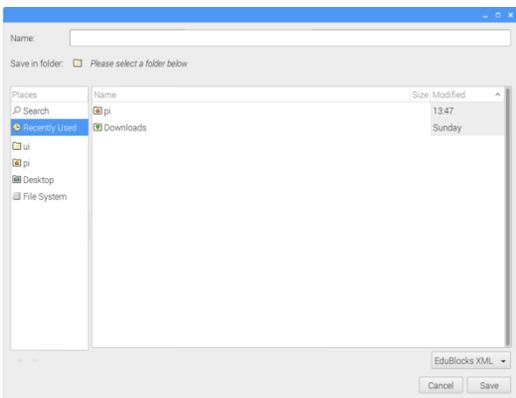
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Save your code

Before we run our code, let's save it. Click on the save button in the top right hand corner of the EduBlocks window. Select the folder called Pi.

Type in the file name box let's call it **amentoblocks** then click save.



Run your code

Now it's time to run our code. Click on the run button in the top right hand corner of the EduBlocks window.

Then click on the Minecraft tab to return to our Minecraft world. Now look at the block below you play sounds

Outcome

In this tutorial we have learnt how to use Minecraft and Sonic Pi together to create a disco blocks. We have also used an if condition to run every 2 beats and an else condition to run whenever the if condition is not running.

Challenge: Can you change the samples to make a different sound.